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CHEERFUL PEOPLE.

I don't like cheerful people. Now, don't misunderstand me, respectable reader; I don't mean for a moment to insinuate that I'm right: on the contrary, I think it very possible, nay, probable, that I'm wrong. It is not my desire to convert you to my way of estimating worthy persons; I only feel called upon to make a confession. The doctor says it's my liver. I dare say it is. I've had a liver, I regret to state, for a great many years, and it has accounted for a great many peculiarities; among which not the least is an unconquerable aversion for cheerful people. They would be very good for me, I dare say, but I don't like the look of them. I feel towards them as I do towards parsnips. Parsnips, I've been told, are very wholesome food, and I ought to eat them whenever I have an opportunity, but I can't: they have to me the appearance of carrots in a bad state of health. If I am to eat carrots, let them be of a healthy red, I say; but don't set before me carrots of a pallid hue, and bid me devour them under the name of parsnips. And then there are oysters: I will not go so far out of the track of truth as to say that I never eat oysters: I have eaten them in all shapes; but I declare I never liked them, and I don't like them now, and I don't think I ever shall like them. I never eat them without shutting my eyes, for indeed I cannot bear the look of them. So it is with cheerful people. I take them in the way of business, or of sociality, but there is to me something inexpressibly repulsive in their appearance. It may be they can't help it, but it is my private opinion that they can. I never look cheerful; why should my fellow-creatures? They have as many crosses to bear as I have, perhaps more (I hope so); and yet they will persist in looking cheerful. It's downright hypocrisy, I say. I can understand a man's being merry, and I can comprehend his being sorrowful; but cheerfulness is more than I can realise.

Perhaps I have a bad disposition: it is not at all improbable; and if I have, I can't help it, any more than Lupkins can help having a bad hat. Not so much; for my disposition is natural, and Lupkins's hat is artificial; and he might have a new hat by paying for it, and he might pay for it if he had any money, and he might have money if he'd work for it, or if some relation or friend, or even enemy (which would be an agreeable surprise), would leave him any, and he might have work if he only knew where to go for it, and at any rate he might know better than to look shabby, and be a reproach to his friends and connections, who have got on very well without him, and so why shouldn't he get on very

well without them? But, as I was saying, perhaps I have a bad disposition. And, talking of dispositions, it strikes me that what is called a naturally good disposition is rated a vast deal too highly: it covers a multitude of sins; all kinds of wickedness are forgiven for the sake of the naturally good disposition. If your heart is in the right place, as the phrase goes, you may put everything else in the wrong place, if not with impunity, with a tolerable chance of being extricated and set right again; but if you have a naturally bad disposition, woe betide you. And yet I can't see how a man with a naturally good disposition is entitled to more consideration than a man with a naturally bad one; on the contrary, it seems to me that the latter has more claim to indulgence and sympathy. The former begins his game of life with—to use a phrase not unknown to billiard-players—a considerable number of points in his favour; whilst the latter may be said—to borrow an expression from the interesting game of pyramids—to commence by owing two or three. There are, depend upon it, many men who struggle frightfully against a naturally bad disposition, some of whom overcome it, and deserve immortal glory, and some of whom succumb to it, and earn eternal shame; but these last merit pity and sympathy, as well as contempt. Old John Bradford shewed a proper feeling when, as a wretch led by to Tyburn, he turned to his friend with the exclamation: 'But for the grace of God, there goes John Bradford!'

So I say, if I have a bad disposition, I'm very sorry for it, but it is no more my fault than it is your merit, sir, that you have a fine head of hair, or an aquiline nose, or regular teeth, or a villainous trick of the eye. Besides, I'll back my disposition against yours; and yet you say you like cheerful people. Very well; then I dare say you like parsnips, and oysters, and caviare, and all sorts of things that raise my gorge to look at. You're very welcome to do so; but pray, don't expect me to do the same. Of course, I am talking only of the cheerful people that I have met; there may be some very agreeable persons of that persuasion amongst your acquaintance, honoured sir, or fair madam, or supercilious miss, so recollect I am not alluding to them. The people I mean appear to me to have made up their minds to put on a cheerful countenance always, just as you lay it down as rule to put on gloves always: they are never more or less than cheerful: they are cheerful at weddings, and at funerals they are only just cheerful. I was once present at one of the latter (to most people) gloomy entertainments in company with one of the cheerful sect. His cheerfulness never deserted him for a second. He talked cheerfully about the weather

(which, by the way, was excessively cold), and about the distress amongst the coal-whippers very cheerfully ; he recounted cheerfully the number of deaths there had been from starvation, and he dilated cheerfully (nothing beyond) upon the buoyancy of the money-market ; he cheerfully reminded us that 'in the midst of life we are in death ;' he cheerfully ate a biscuit, and cheerfully offered me one, which I declined by no means cheerfully ; he drank a glass of wine and a glass of brandy very cheerfully, recommending me cheerfully to do the same (for which I could cheerfully have insulted him) ; and at last, when it was found that there would be some crowding in the mourning coaches, he offered, with the most touching cheerfulness and moving incongruity, to 'go outside, if it would be any convenience to anybody. If it had been that man I was following to the tomb, I really believe I should have looked cheerful.

Then there is a man, whose name I don't know, but whom I meet in the public ways nearly every day of my life. I've never seen him laughing ; I've never seen him with his teeth set, as though he had something he was determined to go through with ; I've never seen him melancholy ; I've never seen him gay ; but he is always cheerful. Confound him, I say ; why does he always look cheerful ? He wears spectacles, too, to which I strongly object, for he by means of them evidently espies me at a considerable distance, and immediately surveys me cheerfully from head to foot, as though he were making a mental calculation as to how much my outfit might be worth altogether. The man has just the sort of grin I have observed on an entomologist's face when he is engaged in scrutinising some wonderful but very insignificant-looking insect. I wish he'd take it into his head to travel. However, if he has any bowels of compassion, I hereby inform him that my doctor says he interferes with the healthy action of my liver.

Then there's Hickup : his cheerfulness must be affectation. Why, he has no digestion, no more than a wooden doll ; and if it is defensible for a man with no digestion to look cheerful, then I renounce all distinctions between right and wrong. It's true he is getting on very well at the bar ; makes £1200 a year, they say—that is (allowing for the multiplying tendencies of envious friends), perhaps £300, which you know is a great deal for a barrister of only ten years' standing ; but he has nothing else to make him cheerful. He's as cadaverous-looking a man as you'd see in a large hospital : he has lost nearly all his hair (from constantly wearing a wig, I suppose), and what he has is not at all of a creditable description, either in point of texture or colour. He's pimply, too ; and I should say his eyes were decidedly aquint. But just as he is, he'll sit opposite you at dinner, with his shirt-collars running into the corners of his eyes (for he eschews fashion), eating a steak, and looking cheerful. The idea of a man with no digestion eating a steak and looking cheerful ! I've spoken to the proprietor of the dining-establishment upon the subject, and told him how exceedingly annoyed I am ; but he only told me to mind my own business, and if I objected to gen'l'men looking cheerful over their viands (particularly such viands as he provided at a moderate charge), advised me to dine elsewhere. Hickup is evidently one of those persons who think it a duty to put a cheerful face upon everything. I say it's downright acting, and not dealing honestly with your fellow-creatures. If you've good reason for being merry, be merry ; if you've good reason for being miserable, be miserable. When Job lost all his property, and had breakings-out all over his body, he didn't put on his Sunday coat, dine at a restaurant, and look cheerful ; but, in the frankest way in the world, acknowledged the change in his position by sitting in the grate in a suit of sackcloth, fasting, and currying-combing himself with a potsherd. You don't set

yourself up for a better man than Job, I hope ; and yet you say that a man is bound, under all circumstances, to keep up a cheerful appearance. I say he isn't. I say, if a man is miserable, he is bound, in common candour, to look so ; and if he ought to feel miserable, and doesn't, but puts on a wilful expression of cheerfulness, he ought to be ashamed of himself for being so callous and indifferent to his lot, and for his contumacious resistance to the efforts which are made to render him a sadder, perhaps, but a wiser man. When a boy at school takes a caning cheerfully, doesn't the schoolmaster (and I hope you'll not gainsay the authority of a schoolmaster) immediately tax him with obstinacy and impudence, give him a double allowance, and consider that he has not done his duty until he has removed from that school-boy's features every trace of cheerfulness ? And should a man who has gone through this preliminary discipline not know better than to bear the chastisements which are inflicted upon him cheerfully ? Resignedly is a very different thing. I've no particular objection to a man's looking resigned (from an artistic point of view), but I beg he'll not look cheerful. I'm told that general cheerfulness is assumed on Christian principles ; if it be so, I have nothing further to say. Let me remark, however, that I have looked in Cruden's *Concordance* under the word 'Cheerful' and its derivatives, but have found no passage which bears out this assertion. A 'cheerful giver' is certainly commended ; but the people I mean never give anything (that is, of value to themselves, and what other kind of gift is commendable ?) except advice, which I must do them the justice to say they dispense with excessive cheerfulness.

Another unchangeably cheerful person is my friend the Rev. Mr Lewyer. I went with him upon one occasion when he wished to purchase some branch-candlesticks to a well-known lamp-seller's. The lamp-seller thought he had exactly the article wanted, and he proceeded to describe minutely a pair of candlesticks which he was sure Mr Lewyer would like. Mr Lewyer listened to the description with the most cheerful smile imaginable, interposed a few questions, made several suggestions, prolonged the conversation for about half an hour, and then serenely informed the lamp-seller that the article in question was 'precisely what he didn't want.' The lamp-seller, I regret to state, swore in an undertone ; but Mr Lewyer left the shop as cheerful as he had entered it, whilst I was afraid that the lamp-seller, seeing I had no cloth to protect me, would visit upon me the indignation with which he was red in the face. And yet I sympathised heartily with him ; for nothing provokes me so much as cheerful patience.

But worse than Lewyer is my cousin Thomas ; there never was such a cheerful creature as Thomas. If you have the toothache, he looks as cheerful as ever, and dilates upon what must be your sufferings with an agonising smile. Tell him of a common friend who is dying of starvation, and his cheerfulness is not a whit impaired. 'Ah ! poor fellow,' says he, with a cheerful air, 'he hasn't a very full lot in this world.' 'Well, but won't you help him in some way or other ?' 'My dear Jim,' says Thomas, 'I would with pleasure ; but I don't see how it can be done. All the money I have to spare, I lay by for my little boy, and it only amounts to a few hundreds. Charity begins at home, you know ;' and Thomas bids me cheerfully adieu. Our common friend dies miserably, and Thomas wears a hat-band with undiminished cheerfulness. But did you ever 'spend a quiet evening with a few cheerful friends ?' I did, and I spent the most wretched time that ever I did in this life. Poor Grollip was alternately the merriest and most melancholy dog you ever saw in your life, when he had the misfortune to marry (for his sins, I suppose) what they call a 'cheerful little woman : so I called upon him to console with him, but, to my horror

and astonishment, I found him beginning to look cheerful. I remonstrated with him, but without effect; and not many days afterwards, received the following note :

'DEAR SIR—We are going to have a few cheerful friends to spend a quiet evening with us next Friday, and Tom desired me to write and ask you to give us the pleasure of your society. We take tea about seven o'clock; and if you will come to us about that time, I hope I need not say how very glad we shall be to see you. Tom told me to say that he thought a little cheerful company would do you good; and I think we can promise you that.—Yours very truly, FANNY GROLLIP.'

It quite upset me: the number of years I had known Grollip, and that he should think cheerful company would do me good! I didn't believe it. 'Mrs Grollip,' said I to myself, 'you don't speak the truth, ma'am. I know what it is. You saw that I was low-spirited the other day, and you talked to Tom about it, and arranged to try whether you couldn't reduce another fellow-creature to the same state of happiness that I observed in him. It's just like you women; you take an unwarrantable interest in your husbands' old friends, and if you see them in a state of natural and proper despondency, you think it incumbent upon you to endeavour to effect a cure. But you'll not succeed with me. I'm not going to be cheerful, if I know it. Shew me something ludicrous, and I'll laugh as heartily as anybody; but defend me from an equitable condition of cheerfulness. I'll drink your tea, though you dispense it at the hour at which I usually dine; but if you see me cheerful, I give you leave to tell me of it.' On Friday, therefore, I make for Grollip's, after much communing with myself as to the proper costume for a 'quiet evening with a few cheerful friends.' One of my chief objections to cheerful people is, that they don't give entertainments like other folks. When you get a note formally requesting the pleasure of your company at ten o'clock, with the word 'Dancing' in the left-hand corner of the first page at the bottom, you know what to do. You clothe yourself appropriately in mourning garments, thrust your feet into uncomfortable patent-leather boots, make yourself as much like a waiter about the throat as you can, buy the cheapest possible pair of white kid gloves, and make up your mind to stand on the staircase for an hour or two, lamenting that you should ever have been born. But cheerful people write you a friendly letter, bubble of green tea, and lead you to believe that you may drop in in walking-dress. It's a mercy I didn't go to Grollip's in a pair of yellow cord trousers and a lounging coat; and I thought there was great excuse for a fellow-sufferer I observed there in a coat which was black certainly, but cut as for shooting. He was the only person besides myself who didn't look cheerful; and he soon pleaded toothache, and retired. As for the other people, they stared at each other in a cheerful manner, and occasionally interchanged a cheerful remark; they drank tea and coffee cheerfully, played whist (which I hate) cheerfully, and some cheerful young ladies played and sang cheerfully. This is all certainly very cheerful, thought I; but I don't think it will do me much good. I don't know anybody here, except Mr and Mrs Grollip, who are engaged with their guests. I can't drink any more tea and coffee—I've had too much already. I feel very uncomfortable. I know I'm very red in the face, and I should like to slip out without attracting attention, but I can't; for though all the people are in full evening-dress, this is evidently not what is usually termed an evening-party; and if I vanish without giving notice, I shall be thought rude; and if I do give notice, Mrs Grollip will think I don't like my entertainment, which is quite true, but not to be acknowledged. So I fell to examining the prints as carefully as though I were a line-engraver (and

I'm sure I wish I was; it is profitable, I'm told); then I scrutinised my boots, congratulating myself that I had not come in my lace-up ones, with iron tips; after that, I scrutinised the other men's boots, and wished I hadn't such large feet; and then I scrutinised the ladies, and wondered why they were in ball-dresses, when they were only spending a cheerful evening. Presently our cheerful hostess proposed a quadrille. This was walked through in a cheerful manner, and so was a second, and so was a third. There was no waltzing, as that, I suppose, is considered incompatible with cheerfulness; but there was a polka and a country-dance. After this, we had some negus (which I abhor), for all cheerful people drink negus; and then I managed—by telling, I am sorry to say, something very like an untruth—to get away, and wandered homewards with my spirits at zero. My road lay over the river; and as I walked across the bridge, my despondency was such that I believe I should have thrown myself in, only I could see no one at hand to pull me out again if I did. But my motions had been watched; and just as I gained the opposite shore, a hand was laid upon my shoulder, and the rough voice of a policeman said: 'You've thought better of it, young man, ave you? If you'd thrown yourself in, I should a took you into custody: but aperiently you ain't got the pluck to do it.' 'You're quite right,' said I; 'I haven't, so you needn't trouble yourself on my account.' But I declare if anything would inspire me with courage for the deed, it is 'a quiet evening with a few cheerful friends.'

LIGHTNING-PRINTS.

Of all meteors, lightning, though one of the most common, is doubtless one of the most interesting and surprising in its manifestations and effects. The admirable experiments of Franklin and Dalibard having proved the identity of the lightning-flash with the spark of our electrical machines, the meteorological effects of the former become doubly interesting, as we endeavour to imitate them in the laboratory.

Now, among the curious effects produced by lightning, there is one class of phenomena which appears to us well deserving attention, and which, from the rarity of its occurrence—or perhaps we should say, the small number of observations we possess—is yet very little known.

We are all acquainted, in these days of photography, with the peculiar action of light upon papers imbibed with salts of silver, or other chemical preparations sensitive to its influence, by which the images of surrounding objects are permanently and elegantly fixed upon the paper; but few are aware that the lightning-flash is capable of producing a similar effect upon the bodies of its victims. That such phenomena have really occurred, and will undoubtedly occur again, is now an established fact in the scientific world; some meteorologists have recently given the name of *Keraunography* (from *κεραυνός*, lightning, and *γραφεῖν*, I write) to these images produced by lightning, and have collected together the most authentic observations relating to them; and it is principally to papers recently published by Orioli in Italy, Dr Boudin and Baron d'Hombes-Firmas of Paris, and M. Andrés Poey, director of the Observatory of Havana, that we owe most of what we know upon the subject.

The first mention that appears to have been made of lightning-prints is found in a work of one of the so-called Fathers of the Church, St Gregory of Nazianz, who declares that in the year 360, images were printed by lightning upon the bodies and clothes of the workmen occupied in rebuilding the temple of Jerusalem. The Jews having been caused by the Emperor Julian to reconstruct their temple, the labourers were occupied with the foundation-work

when an earthquake took place. It was preceded by a whirlwind and tempest, which suddenly arose, and forced them to take shelter in a neighbouring church. According to St Gregory—a contemporary of the Emperor Julian, and the only one who has left us a detailed description of the circumstances—during the tempest, 'globes of fire were seen to proceed from the earth, and the workmen who had taken refuge in the church had certain *figures of crosses* mysteriously printed upon their cloths and their bodies. These crosses are said to have been dark or invisible during the day, but brilliant or phosphorescent in the darkness of night.

These facts are repeated by many ancient writers who lived a century or so later, and whom it is useless to quote here. More modern writers, however, such as Moyles in England, and Baasnage in France, do not admit them, and appear to be of the same opinion as an anonymous writer in the *Encyclopædia Perteinensis*, who says, speaking of this impression of crosses, that 'some have endeavoured to account for it on electrical principles. But it is a degradation of philosophy to attempt to account upon philosophical principles for a fabulous legend which bears the most evident marks of one of those *pious frauds* which have so often disgraced the Christian faith.' However, it will be seen, from other cases brought forward in this paper, that it is not improbable some workmen may have been struck with lightning during the building of the temple, and had figures of crosses printed upon their bodies. In more modern times, this same impression of *crosses* upon the body by the action of lightning was noticed by the Rev. Dr John Still, bishop of Wells, in Somersetshire, and handed down to us by Isaac Casaubon, who inserted the observation in his *Adversaria* about the year 1610-1611. It appears that one summer day in the year 1595, when the people were attending divine worship in the cathedral of Wells, two or three claps of thunder were heard, which frightened them so much, that they all threw themselves upon the ground. Lightning fell without hurting any one present, but, strange to relate, crosses were found to have been printed upon the bodies of those who attended the church; and, what is more, the bishop himself found upon his own body (upon his arm) a similar mark. Others had these crosses upon their shoulders, or upon their breasts, and they were witnessed by many persons.

A third case of *crosses* printed probably by lightning is on record; it happened during the eruption of Vesuvius in 1660. The fact was communicated to Father Kircher, who published a long dissertation upon it in 1661, entitled *Diatribes de Prodigiis Crucibus qua post ultimum Incendium Vesunii Montis Napoli comparuerunt*. A copy of this work exists in the *Bibliothèque de Ste Geneviève* of Paris. It informs us that, after the eruption of the volcano, crosses were seen upon various articles of linen, such as shirt-sleeves, women's aprons, and table-cloths, which were exposed to the open air during the volcanic phenomenon. These crosses were observed in great numbers throughout the kingdom of Naples. Thirty had been counted by one individual upon the linen cloth of an altar, fifteen upon a shirt-sleeve, and eight upon the dress of a child. According to the same author, the size and colour of these crosses were very different. Pure water could not efface them, but soap and water caused them to disappear. Some are said to have lasted for a fortnight, others longer still. It has not been recorded by Kircher whether lightning was observed or not during this eruption; but it is well known that atmospheric perturbations, and often the most violent tempests, accompany the volcanic eruptions of Vesuvius, and indeed of all volcanoes.

In 1750, William Warburton published a curious book, entitled *Julian, or a Discourse concerning the*

Earthquake and Fiery Eruption which defeated that Emperor's Attempt to rebuild the Temple at Jerusalem, in which the author appears to be of opinion that the crosses printed upon the bodies and clothes of the workmen were really luminous or phosphorescent at night, and dark or invisible in the daytime. Rufin and Socrates, according to the same author, assure us that the impressions were indelible, and could not be effaced by any means that were attempted. Warburton supposes the form of a cross to be owing to the zigzag shape of the lightning discharge, which, when not clearly defined as a zigzag, might easily appear as a cross. Another circumstance worth noting is the following: the crosses observed at Jerusalem were printed upon the skin and upon the clothes of the workmen; those observed in the cathedral of Wells were printed only upon the skin; whilst those at Vesuvius appeared solely upon clothes exposed to the air.

Robert Boyle, in the fourth volume of his works, adopts an opinion put forth by Kircher in the book quoted above, and attributes the production of the figure of crosses to the transport of some volatile matter exhaled from the earth, and which, being deposited upon the threads of the linen, crossing each other at right angles, would infallibly give rise to crosses.

A paper printed in the *Journal des Savants* for 1690, by the Abbé Lamy, puts us in possession of another curious fact relating to lightning-impressions. On the 18th July 1689, lightning struck the tower of the church of St Sauveur, at Langy in France, and, in an instant, printed upon the cloth of the altar some Latin words of a prayer-book. The words *Qui pridie quam pateretur, &c.*, to the end of the prayer, were all reproduced, with the exception of *Hoc est corpus meum, and hic est sanguis meus*, which were printed in *red* ink, whilst the others were in *black* characters. The only difference remarked between the two sets of characters—namely, those of the prayer-book and those printed by the lightning-flash—was, that the latter were *reversed*.

But leaving these impressions of crosses and prayers, the accounts of which have come down to us chiefly from ecclesiastical writers, we pass on to some more interesting and more tangible cases of what might almost be called *lightning-photography*.

In the year 1786, that distinguished member of the Academy of Sciences, Leroy, announced that Franklin had frequently repeated to him, some forty years back, the case of a man who, whilst standing at his door during a thunder-storm, saw the lightning fall upon a tree opposite to him. It was afterwards remarked that a reversed image of the tree was indelibly printed upon the breast of this man. Another still more extraordinary case occurred in the year 1812. It was related by Mr James Shaw to the members of the *Meteorological Society* of London. In the year named, there existed, near the village of Combe Bay, about four miles from the town of Bath, an extensive wood, composed chiefly of oaks and nut-trees. In the centre of the wood was a pasture-ground of some fifty square yards in extent, where six sheep were lying when a storm came on, and 'all the sheep were killed by the lightning.' When the skins of these animals were afterwards taken off, it was observed that the internal portions of each separate skin bore the most faithful image of the surrounding landscape—every detail of which was distinctly printed upon the skins. 'When the skins were taken from the animals,' says Mr Shaw, 'a *fac-simile* of a portion of the surrounding scenery was visible on the inner surface of each skin. . . . I may add that the small field and its surrounding wood were so familiar to me and my school-fellows, that when the skins were shewn to us, we at once identified the local scenery so wonderfully represented.' These skins were exposed to public gaze for some time, as a curiosity, in the town of Bath.

M. José J. Figueroa has communicated to M. Poey several interesting cases of lightning-printing, from which we select the following :

An old inhabitant of Cuba, who has now entered upon his eighty-first summer, relates that in his younger days he knew an individual who had the image of a *piece of money* printed upon his arm by lightning. At the moment the electric discharge took place, the person in question was seated at a table upon which the piece of money lay, and with his right arm (which received the impression) leaning upon the table.

M. José Blanco, a lawyer of Havana, has often heard a story related of a countryman who, whilst riding on horseback through a wood, was overtaken by a tempest, and the image of a cross was printed upon his breast by the effect of a flash of lightning, which killed his horse instantaneously. This image was the exact representation of a metallic cross which hung upon his breast, and which was nowhere to be found, when the man recovered from the effects of the electric shock.

From the same source we get also the history of a cat killed, whilst sucking its young, by lightning, which struck the Audience Chambers recently erected at Havana. On the body of this animal was observed the impression of a *circle*, an exact representation, though much smaller, of another larger circle which formed part of the building.

And lastly, in the province of Jibacoa (Cuba), lightning was seen to strike a large tree in August 1823, and printed upon the trunk of it the image of a bent nail which had been driven into one of the higher branches.

We now come to a very well-known case of lightning-photography, recorded by Professor Orioli, and communicated to the Academy of Sciences at Paris by M. d'Hombres-Firmas in 1847. In September 1825, lightning fell upon the ship *Il Buon Servo*, lying at anchor in the Bay of Armiro (Italy). A sailor, who was seated at the foot of a mast, was struck dead by the flash. On his body were observed two slight marks—the one yellow, the other black—which proceeded from the man's neck, and continued as far as the region of the kidneys, at which spot the most distinct image of a *horse-shoe* was printed. This image was the exact representation of a real horse-shoe nailed upon the mast, at the foot of which the sailor sat. Moreover, the image and the real object were exactly the same size.

Wonderful and exceptional as this fact may appear, we have, from Orioli, another very similar and no less extraordinary case. A sailor was struck by lightning whilst asleep in his hammock on a ship lying at anchor in the port of Zante (Italy), and the number 44 was most distinctly printed upon his breast. The sailor was killed by the discharge; but all his comrades attested that the figure of this number did not exist upon the man's breast before the accident. It was the exact copy of a metallic figure 44 attached to the ship, and placed between the mizzen-mast, upon which the lightning fell, and the place where the sailor slept.

To Mr Poey, who has been at great trouble to assure himself of the authenticity of the facts he relates, we owe several other extraordinary examples of lightning-prints, which we will endeavour to describe in a few words.

The first happened in the province of Candelaria, (Cuba), in 1828. A young man was struck dead by lightning near a house, upon one of the windows of which was nailed a horse-shoe. The image of this *horse-shoe* was most distinctly printed upon the neck of the unfortunate young man, underneath the right ear.

The next is the case of a lady of Trinidad (Cuba), who fortunately was not killed, but upon her body was found the *image of a metallic comb or brooch*, which she wore in the band of her apron.

The following case of this kind is exceedingly

curious, and reminds us that lightning-prints may occur upon inanimate tissues, such as linen, &c., as well as upon the bodies of men and animals. The phenomenon we are going to describe was related in a letter addressed to Dr Boudin by Monsieur de Bessay, who was present when it occurred. On the 14th November 1830, lightning struck the Château de la Benatonière in La Vendée. The following day, one of the inmates remarked upon the back of a lady's dress a *peculiar design*, which happened to be a faithful copy of the ornaments on the back of one of the chairs in a saloon of the château. The lady to whom the dress belonged remembered that she was sitting in that chair when the storm raged over the château. The image upon the dress was so distinct, that it appeared as if it had been recently copied, with great pains, from the design at the back of the chair.

We now come to an example of lightning-prints which is not only known to be perfectly authentic, but which has given rise to some scientific discussion as to the manner in which the image was produced. The facts are simply these: On the 9th October 1836, lightning killed a young man near Zante. He had around his body a belt, containing some gold pieces, and the *images of six* of these pieces were indelibly printed upon his right shoulder by the electrical discharge. An account of this phenomenon was communicated to the Neapolitan Scientific Congress, on the 22d of September 1845, by the president of the congress, Professor Orioli, with a report by Dr Pascal Dicapuolo of Zante, and certain legal certificates relating to the affair. A discussion ensued upon the subject. Professor Orioli said he had no doubt that the electric current which killed the young man had passed through each of the six pieces of money, and left the impression of them upon the skin; and Signor Gennaro Galano corroborated this opinion; besides which, Professor Palmieri brought forward an electrical experiment, which appeared to confirm Orioli's statement. At the next sitting of the congress, on the 23d September, Signor Vismara, Signor Longo, and some others, evinced the opinion that the electrical discharge had carried off some of the metal, and deposited it upon the skin. But it appeared, after further examination, that the pieces were completely intact. On the 17th December of the following year (1846), Baron d'Hombres-Firmas brought the case before the Academy of Sciences at Paris, and again in January 1847, when it gave rise to more discussion. The images produced were not *fac-similes* of the gold pieces, but *circles of three different dimensions*, corresponding precisely in size and form with the *three kinds of pieces* in the young man's belt. The impressions were upon the *right shoulder*, and the money in the belt was slung over the *right side* of the man's body. The circles were not coloured: the skin in the printed parts was of its natural colour, but all around it was blackened by the lightning-flash, so that the images were seen by contrast. To sum up: it appears most probable that the six pieces of gold, being good conductors, concentrated the electrical discharge, which, radiating from them in all directions upon the man's body, produced a chemical change in the constitution of the tissue of the skin which it blackened.

It has been imagined that the blood of the person struck by lightning participated somewhat in the production of these images, and the case we have just related seems to point at this conclusion. Indeed, Arago, Bossut, and Leroy were all of opinion that the electrical discharge forces the blood into the capillary vessels on the surface of the skin, and so modifies this liquid as to leave indelible impressions. They quote the case of a man struck by lightning, whose body was covered with very singular marks resembling the ramifications of minute blood-vessels. Again, in July 1841, a magistrate and a miller's boy were

struck by lightning in the department Indre-et-Loire (France), when it was remarked that the breasts of both were covered with spots resembling the leaves of a poplar-tree. The miller's boy was killed, but the magistrate recovered, and the marks upon his body disappeared *as soon as the circulation was re-established*.

We have no doubt ourselves, that in most of these examples of lightning-prints where external objects, either in contact with the body or at some distance from it, have been reproduced as if by photography, the blood in the capillary vessels is the medium which received the electric influence. Such, for instance, was evidently the case with Madame Morosa, an Italian lady of Lugano, who, whilst sitting at her window during a storm in 1847, felt a severe shock; and the *image of a flower*, which appears to have been in the electric current, was so indelibly printed upon her leg, that she preserves the mark to the present day. But a difficulty seemingly arises with regard to various objects where no blood is present; for instance, the impression observed upon the lady's dress in the Château de la Benatonière, quoted above, and that of the nail upon the tree, not to mention the images of crosses and Latin words upon linen, &c., alluded to before, which are the most unsatisfactory reports we have had to deal with in this paper. Moreover, a Cuba newspaper reported in 1852, that lightning struck a palm-tree in the plantation of St Vincent, and *engraved upon the dry leaves* of it a representation of some pine-trees growing in the neighbourhood, at a distance of some 340 yards. The image was so perfect, that it appeared more like an engraving than anything else. These and similar apparent difficulties will vanish at once, when we become acquainted with what has already been done in the laboratory; for instance, when we know that by placing a medal upon a plate of resin, and passing an electric discharge through it, we can obtain an image of the medal upon the resin, we cannot see anything marvellous in lightning being able to print forms upon similar inanimate matter.

Cases similar to that reported by Franklin of the *image of a tree* being impressed upon the body of a person struck with lightning, have been more than once observed of late years. In August 1853, the New York *Journal of Commerce* reported that a young girl was struck with lightning whilst standing at a window during a storm. Opposite to the window was a *nut-tree*, the entire image of which was indelibly stamped upon the girl's body. Again, M. Raspail has mentioned lately a few similar facts, among which one, where the *image of a bird's nest* was impressed upon a child who was climbing a tree to get it; and in 1857, the *Echo de Bruxelles*, a daily paper, reported a very remarkable case, which first drew our attention to this class of phenomena. In September 1857, a peasant-girl who was minding a cow in the department of the Seine-et-Marne, having taken refuge under a tree during a severe storm, the lightning struck the tree, the girl, and the cow. The latter was killed, but the girl recovered. However, whilst loosening her dress, to induce respiration, a *distinct image of the cow* was observed upon her breast.

Last year, the French scientific periodical, *Le Cosmos*, registered the account of a terrible storm at Lappion (Aisne), where six workmen and a child received severe shocks, and a woman of forty-four years of age had the *image of a tree, trunk, branches, and leaves*, distinctly printed in red upon her person. There appears no doubt that in all these cases of lightning-prints, the image produced upon the body indicates the object from which the electrical discharge emanated on its way to the person struck with lightning; in other terms, that the object whose image is produced formed part of the electric circuit. The extraordinary velocity with which electricity travels renders it of little import whether the object printed upon the body be in contact with the latter or at some distance from

it. The same remark holds good for the action of light in photography. As to the molecular change induced in the tissue upon which the image is impressed, it may be assimilated to what takes place upon a photographic plate; and when we can explain how the forms, and even the colours* of objects placed at a distance, print their images upon certain chemical preparations, we shall have made a step towards the complete solution of the problem of lightning-prints.

Of late years, many curious experiments have shewn us that images similar to those of the lightning-flash can be produced in the laboratory. One of the most interesting was recently made by Mr Grove. Having scratched a design with the point of his penknife upon a piece of white paper, he placed it between two plates of polished glass, which were then submitted to an electrical discharge. On removing the plates, no image was visible upon the glass; but on exposing the latter for a few minutes to the vapour of hydrofluoric acid, the impression came out most distinctly.

In another experiment, made in Germany, a manuscript was transferred, by means of an electric discharge, to a paper imbibed with iodide of potassium and starch.

Experiments such as these will doubtless lead to some useful applications in the arts. We are not of those who are constantly exclaiming that steam, light, heat—everything, in fact—should be now a days replaced by electricity; but we fancy that the phenomena which have occupied us in this paper, when submitted to deeper study than they have been up to the present time, will lead to some extremely practical results, especially in this country, where so much printing of every description is daily at work. The calico-printer, the lithographer, the photographer, and the engraver, may soon have to coincide with our opinion.

Lately, a Belgian author proposed that the guillotine should be replaced by the electric discharge. 'Fancy the criminal,' says he, 'standing on the scaffold addressing the multitude. The hand of justice lowers itself upon his head, the electric spark flashes and cuts him short. . . . Death, which we fear so much, is only the pain multiplied by the time, and electricity travelling some two hundred and forty thousand miles per second, whilst the biggest criminal rarely exceeds two yards, the passage from life to death would be accomplished in about $\frac{1}{100,000}$ th part of a second!' Our author soon perceives, however, that such a death would be too easy, and would be likely to tempt mankind to crime, whereupon he proposes torture instead. Had he known anything of lightning-prints, he would certainly have proposed electricity to *brand* his criminals, and not to kill them.

UNDER WATER.

THESE is one incident in my life which never recurs to my memory without causing a cold shudder to run through my whole body. It took place at a time when I contemplated entering the church, though I had even then begun to have doubts whether my vocation tended that way; but as it was desirable in any case that I should take my degree of M.A., I accepted the offer of a post in one of the best conducted of our endowed schools, to pass the months that must necessarily intervene before I could go up for my degree at the least pecuniary cost to myself. There was another reason why I practised economy where it was possible to do so without interfering with my immediate object, and this was that I might have more funds at my disposal for experiments in mechanics, and especially in the construction of a dress and appliances for enabling a person to remain under

* According to some experiments by Bequerel and Niepce de St Victor, repeated very recently by the latter, with marked success.

water for any length of time he might desire. Experimental apparatus of this kind can only be made at a considerable outlay, and required a greater amount of space for the construction of models than I could conveniently devote to the purpose in my rooms at the university. It so happened that the school in which I had accepted an engagement was within two miles of the most rocky portion of our coast, and the sight of the numerous coves, in which the water was always deep, offered an excellent opportunity for putting my ideas to a practical test.

One day, as I was wandering along the top of the cliff, stopping every now and then to look down its precipitous sides at the smooth sea which alternately swelled against and retreated from it, I came upon a coastguardman whom I had not met before. He touched his hat, as they always do at these out-of-the-way stations, with the hope of getting a few minutes' conversation, to relieve the monotony of their existence, and I did my best to gratify him. 'You cannot have been long in this part, for I do not remember your face, and I think I have never passed any man of your force without looking at him since I have been down here.'

'O yes, sir; I have been here a long time, and have often seen you through my glass, when you have been down on the beach to bathe; but my beat ended where you see the cliff projects yonder so far out into the sea, and you never came up there.'

'That is true. It is rather out of the way, and is difficult to get at; yet I have several times thought of going there, on account of the fine view which one must get from it.'

'The finest view along the whole coast in fair weather; but when it is blowing a gale, you must look out, if you don't want to be blown over. Many a time I have lain there and seen a vessel driven in, foot by foot, in spite of all that those on board could do.'

'I suppose, on a coast like this, the crew of a vessel driven in by a gale are always drowned?'

'Almost always. Now and then, it strikes the cliff on the top of a very high wave, and one or two of the crew get pitched up on a rugged part of the rock, where they contrive to hold on till the gale abates, and a boat is able to get round and take them off; but that rarely happens.'

'Has any vessel of large tonnage been wrecked here since you have been on this station?'

'Well, there was a brig of I should say about three hundred tons went down in that cove away yonder about four months ago. Take the glass, sir, and you will see a part of the cliff which points towards you like the bowsprit of a vessel. It lies just beneath that; and on a quiet day like this is, you can see it full twenty feet below the water when the tide is out.'

'I see the spot you mean. Does your beat extend so far in that direction?'

'A good deal further than that; for since she was wrecked, I have been moved round here, to be nearer help, in case of being attacked by some who have sworn to do me a mischief if ever they have a good opportunity.'

'What for? What had her wreck to do with you?'

'Why, I made a report as to the way in which I believe it was brought about. But if you would like to walk over and look at her, I will tell you how it was as we go along.'

I accepted his offer, and he went on: 'It was about as dark a night as ever I saw, the night she was wrecked. I was lying right out at the end of that bluff I shewed you; I was sweeping the coast with my glass in search of lights, when all at once I caught sight of one, rising and falling, as though it was hoisted at the mast-head of a vessel. At first, I thought it really was a vessel, although I knew if it was it must be quite close to the cliff; but after watching it a bit with my glass, I found it never

changed its place in the field, but kept always in the same position; then I knew it must be on land, and I judged it to be a signal to a smuggler out at sea. If you were on that bluff now, you would be able to see between two and three miles off a part of the cliff, where a few shrubs and crooked slender ash-trees grow. As I felt pretty sure it must be there, I left the edge of the cliff, and started off at a good pace in that direction. Before I got there, I met one of our men, who was waiting for me to come up. We found the light was hoisted at the place I had supposed, and we got down the cliff as quietly as we could, so as, if possible, to avoid being heard or seen until we had made out how many men we should have to deal with. To our surprise, though the light continued to rise and fall, sometimes more and sometimes less, we could make out no sign of a human figure. We pointed our glasses at every dark object, until we had satisfied ourselves that, at the most, there could not be more than one or two men there; then we took a firm grip of our sticks, and crept, as straight as we could, towards the light. I went first, because I knew the ground better, and it was lucky for both of us I did, for otherwise we should most likely have tumbled over the edge of the cliff into the sea; in which case, with our heavy jackets on, we should have been drowned, for though the top is not more than ten or twelve feet above the water, it is so steep that it is impossible to climb up it. There was no man there. The lantern was tied to the top of one of the ash saplings, and its weight nicely balanced against the spring of the plant by putting stones in the bottom, so that it bent over the edge of the cliff, and rose and fell with every breath of air. I groped about till I got hold of the ash, and cut away the top of it, lantern and all, and gave it to my mate to carry to the station, where we agreed he should go to put them on the look-out, while I went back to my post on the bluff, where I should be most likely to see if anything happened in consequence of the light being hung out.'

'You see, I knew pretty well now that it was not put there as a signal to a smuggler, because in that case it would have been placed where it could not move, the effect of the motion being to give it the appearance of being hung from the mast of a vessel at sea; but still, smugglers are so artful that it was impossible to be certain that it was not a signal arranged in this way to deceive us, and capable of being recognised by their mates at sea. What I believed, however, was, that it had been put there by some villains, with the hope of bringing a vessel against the rocks. You will understand that a ship running along the coast on a dark night, and seeing this light, would imagine that it was a vessel between her and the coast, and the depth of water all along here being well known to mariners, the officer would suppose, if he had four or five hundred yards more offing, that he was quite safe; but if you notice the lie of the coast, you will see how easy it would be for a ship mired in this way, while steering a course which *ought* to be safe, to run right upon the rocks out there. Well, I have told you already that the night I am speaking of was pitch-dark, and if I had not been able to find my way to any part of my beat blindfold, I should not have found my way back there that night; as it was, I was obliged to be very cautious in my movements. I must have got pretty near the end of the point when I stopped to turn my glass towards a light at sea. There could be no mistake about its being a vessel, for I could make out portions of her rigging by the light she carried at her mast, and also at her bows. On such a dark night, when it was quite impossible to make out the least sign of land, I could not tell whether she was holding a course which would take her safely past the point we are going to or not; but I feared not, and I hardly breathed while I watched her going

steadily along. Suddenly I saw the light at her mast dashed backward, and could distinguish the sound of the breaking of timber; the light at the bows was extinguished, and I saw nothing more. This was just about the time of high-water.

'It wanted some time to daylight when this took place, and several of our men were on the spot waiting to see what had happened; but even when it came we could make out nothing, except an empty boat floating out to sea, and here and there a smaller object tossing about in the water, and going out with the ebb. We tried to hope that, after all, the vessel had escaped with damage to her masts only, and that her crew had managed to get up some kind of sail, so as to get way upon her; but while examining the wall of cliff with my glass, I caught sight of a piece of rope dangling from that piece of rock I shewed you that looked like a ship's bowsprit. I called the attention of the others to it, and some of us went to the station, and pulled round from there in a boat, and then, as the sun was by that time quite up, we were able to make out a vessel standing on her keel, as though she was in dock waiting to have her bottom cleaned or repaired. She had come in on the top of high-water; her bowsprit had most likely passed just under the projecting rock, which had then caught her masts, and swept them from her deck, rigging and all, at the same instant that her bow struck against the jagged rock, so that she filled directly, and went to the bottom.

'What her name may have been, where she was bound to, or where she came from, there was no means of knowing. Nothing, as we know of, has ever been washed out of her, nor have any of the men about here who have tried it been able to get anything up through her hatchways with grapnels. Four days after she went down, some fishermen brought in the body of a middle-aged sailor, which we supposed was one of the crew. His right arm was very much torn, as though by the rigging attached to the falling mast. He was most likely steering when she struck.

'Up to this time we have been able to get no clue to the ownership of the lantern; but there is no doubt that some wretches hung it there with the view of bringing vessels against the cliffs, though they were disappointed in their hopes by its happening to catch my eye, and by the only vessel that was misled by it going down in such a curious way in deep water. Five days ago, I picked up a letter on my beat threatening to toss me over the cliffs, and so on. I gave it to our commanding officer, who removed me to this beat in consequence. There! that is where she lies, just below that fence.'

I found, when we reached the point of the cliff referred to, that the sun had sunk so low that its rays struck the water at an angle which made it impossible, even with the glass, to see more than a few inches below the surface; but my companion told me that any day I felt disposed to go out to look at it, I might do so by calling at the coastguard station, and sending in my name to the officer, who would be certain to give me a place in the boat if it were going out. A day or two afterwards, I had an opportunity of doing this. The officer was very obliging, and ordered the boat to be manned at once, he himself going in it. The oars were taken into the boat as we lay over the sunken vessel, and I found no great difficulty in satisfying myself that the coastguardman's statement as to her position was quite accurate. To all appearance, she had run straight against the rocks, her stern having been forced under water by the pressure of the rock against her mast; her fore-part had then been stove in; then she had recoiled a few feet, and had filled and gone down almost instantaneously in the deep water, finding a natural cradle among the rocky peaks at the bottom. That she had not shifted her position, or been broken up, the officer attributed to her being

so far below the surface of the sea as to be beyond the reach of the influence of the tides, and that nothing short of an unusually violent gale would be sufficient to displace her.

As I walked homewards, an irresistible desire took possession of me to put my invention to the test. It was almost impossible that a more favourable opportunity could occur for doing so, and if I hesitated it was only from a morbid dread of the ridicule which would fall upon me in the event of failure. Once a day, either morning or evening, I went to the spot to bathe, having discovered that a platform on the opposite side of the projection on which the submerged vessel lay could be reached with perfect safety by cautiously descending the cliff. This platform was a few feet above the level of the sea, and very effectively screened from the eyes of the coastguard. It became an everyday amusement with me to swim round the point and dive down to the deck of the vessel, until I had become so familiarised with its appearance, that it seemed to me it would be perfectly easy to ascend the hatchway and make my escape, in the event of an accident to the apparatus. The more frequently I descended to the deck of the vessel, the more eager became my desire to penetrate to her interior, and learn something respecting her. Eventually, I determined on making the attempt, and running the risk of being seen, and I only waited for a favourable opportunity to do so.

The apparatus I had prepared was so simple that a clear idea may be given of it in half-a-dozen lines. It consisted of a cap or head-piece of stout india-rubber, the upper part of which was thicker than the lower, and fitted pretty closely round the forehead. In the fore-part were fitted two large eye-pieces of fine, strong glass, and below these the tube passed through into the mouth, the air being in this way drawn directly from the atmosphere, exhaled from the lungs through the nostrils, and forced out into the water through two short thin tubes, which were readily distended by the pressure of the breath, and closed of themselves when the expiration was completed, without admitting a particle of water. To keep the whole thing in its place, and prevent it from being dragged off, a strap was carried over the top, each end of which was attached to another strap which ran down the helmet, and fastened beneath the armpit. The tube I made use of on the occasion of my descent into the bark which I am about to describe, was a little over forty feet in length, having about twelve inches from its upper extremity, a bulbous-shaped expansion, which floated on the surface of the water; the twelve inches of tube projecting upwards from this ball being quite sufficient, as I considered, to prevent the chance entrance of any spray into the tube.

The greatest difficulty was to make the lamp burn under water. I could see my way clearly enough to the construction of the thing, but it involved appendages which would have been very inconvenient for my purpose. In this dilemma, I had recourse to a friend who has since made a reputation as a chemist, and from him I received certain substances, with directions to mix them in a strong stoppered bottle, immediately previous to use.

Thus prepared, I packed the things in a small bag, and started one Saturday morning for my usual bathing-place. Arrived on my platform, it took me but a few minutes to prepare myself for the descent. At the last moment, I mixed the chemicals according to my instructions, carefully tied down the stopper; and on letting it sink below the surface, I had the satisfaction of seeing that it emitted a strong phosphorescent light. I drew on the head-piece, buckled the straps under my arms, and thrusting my left arm through the coils of tubing, used the other to swim round the projecting rock. Here I released my arm, and plunged straight down to the deck of the vessel by a

mode of propulsion familiar to swimmers. I laid hold of the stump of the mast, and sat quietly on the deck for three or four minutes, with the view of testing the efficiency of my apparatus before descending the hatchway. I found it to answer admirably; the great thing to guard against being the expiration of the air from the lungs into the tube, instead of expelling it through the nostrils; but I had so completely accustomed myself to the requisite mode of breathing that I had not thought it worth while to adopt a mechanical appliance to render this impossible, as I might have done. Finding that all was satisfactory, I crawled along the deck to the cabin stairs, and forced my way down. Here I had to move with extreme caution, for things were floating about which, though not heavy enough to do me harm, might have entangled themselves in my tube. In the first-cabin, the skylight had been either forced off by the pressure of the air, or what is more likely, had been taken away the better to provide for the ventilation of the cabins. On the table there still lay a thick volume, which, on opening, I found to be an old quarto edition of Anson's *Voyage Round the World*, bound up with a German version of Kempfer's *Japan*. A couple of tumblers were lying on their sides against the raised edge of the table, in the middle of which stood a heavy metal inkstand. A round piece of wood, hooped round, hung from the roof of the cabin, and two decanters, partly filled, retained the position upon it in which they had been placed by hands so soon afterwards rendered incapable of changing it.

There were two sleeping-places on the left of the entrance to the cabin, both of which were empty; and on the opposite side there were two others, in one of which was the body of a little boy, and in the lower one, the body of a little girl. Her face was bleached by immersion, or had been in her lifetime of a white waxy appearance, and her hair was long and worn in plaits. She lay partly with her face on her pillow, and one little arm hung over the side of the berth, and waved gently up and down as I approached, owing to the motion communicated to the water by my presence in the cabin. The same movement caused a sheet of paper to float out of her berth, and thin I secured and passed under a strap I had buckled round my waist, chiefly to carry a knife. Not seeing any drawers, or any place in which papers could be kept in this cabin, I passed into the next. I am not ashamed to acknowledge that the bodies of the two children I had seen in the other cabin had a good deal unnerved me, though I had made up my mind, before coming down, that I should have to encounter some such objects; but the sight that met me now was far more painful, and had time to impress its horrors upon me by reason of the slowness with which I was able to realise them in consequence of the weakness of the light I carried. A low bedstead projected across the open entrance, and I felt relieved when I moved my light over it to find that the bed appeared empty; but on edging my way up to the side I felt a naked foot thrust between my legs, and I had to make a violent effort to prevent my feelings from overcoming my reason. Beside the bed there lay the bodies of a man and woman, probably the captain and his wife. The man lay on the floor, and the woman with her head against the side of the cabin, her legs on the pillow, and her arms clinging round her husband's neck. From their position I imagine the captain was in the act of getting out of bed on feeling the shock; and at the same instant, as the water came rushing into the cabin, his wife clasped him round the neck, and both were forced down by the rush of water, and drowned. I was obliged to move the woman's body slightly to see what the captain's face was like. He looked composed, and I might have supposed he was asleep but for the unnaturally white appearance of his flesh (an appearance, by the way, which might have been

partly owing to the nature of the light by which I regarded him). He was a fair-haired man with a yellowish beard, which he wore long, and I perceived that some of the front teeth were wanting in the upper jaw. The woman, too, was fair-haired, but to have seen her face I must have unwound her arms from her husband's neck, and that I had not the heart to do.

As the principal object I had in view in entering the sunken vessel was to ascertain her name and the place to which she belonged, I looked round for any drawers or other place in which the captain would be likely to keep his papers; and on a little table at the further side of the cabin I could make out what seemed to be a writing-desk. I moved towards it, and was just stretching out my unoccupied hand to lay hold of it, when I felt a drop of salt water pass from the tube into my mouth. I stepped back instantly into the outer cabin: in my eagerness I had forgotten to bear in mind the length of my tube and the distance I had advanced, but this suddenly reminded me of the danger I ran from advancing only an inch too far, as well as from the rising tide, even if I remained stationary. In the sudden alarm inspired by this occurrence, I thought only of getting on deck again; but when I began my retreat, I found it was a very different thing to going forward. The tube had risen and become entangled among the floating objects I have mentioned; and while I was trying to get it free, another drop of salt water came trickling down, and the next instant my mouth was filled with it. Half choked as I was, I succeeded in swallowing it, and drew three or four inspirations with freedom, upon which I was encouraged to make another attempt to disentangle it, but the instant I moved, the water again rushed down the tube, and this time in larger quantity; so that I was near falling down suffocated. A moment's reflection, when I was again able to breathe, made the whole position of things quite clear to my mind. The tube had become entangled among the articles floating about in the cabin and at the bottom of the stairs, so that the ball was unable to rise as the tide flowed; consequently, the orifice was but little above the surface of the sea; and the tube might, the very next instant, be filled by a wave a little higher than usual, and I should be rendered powerless. In this emergency, I decided on adopting a means of escape which a good swimmer will perceive to be perfectly feasible. I undid the string which held the bottle, and let it go; then drew my knife from my belt, and taking hold of the tube, I cautiously filled my lungs with air—having previously placed myself exactly under the skylight—and drawing the pipe from between my teeth, I cut it away close to my mouth. Without the loss of a fraction of a second, I sprung up to the skylight, and drew myself through. This was the critical moment; and had the circular opening in the skylight been ever so little smaller, or had I been impeded by the accidental presence of any obstacle, I should have been lost. Fortunately this was not the case; but I had another difficulty to encounter before I found myself safe on my platform. A desperate spring upwards and a few strokes brought me to the surface; I thought I had only to look round and swim to the place I had started from, but when I tried to do this, I found that I could distinguish nothing clearly through the wet eye-glasses. However, what a man can do out of the water he can do in it, only more slowly; and having freed my head from the apparatus which encumbered it, I struck out for the point whence I had started, which the tide had almost reached. It was not just at the time that I felt the most acutely all the horrors of the situation I had passed through; I seemed only to realise them by degrees, and when this was at the worst, I was so completely unnerved, that I refrained from even walking on the cliff, for fear of falling off into the sea.

I append a copy of the fragment of the letter I rescued from the vessel, not on account of its possessing any particular interest for the English reader, but from the possibility that it may meet the eyes of those for whom it was intended, and lead to the identification of the vessel. The letter was written in German, and I have translated it very literally.

‘**MY DEAR MADAME DE GROETS**—We expect to-morrow to finish our voyage, which my husband says is one of the best he ever made. We have had a fair wind all the way, and the sea has been as smooth as could be desired, which rejoices me much on account of the dear children, who have not been sick at all since they came on board. Little Anna has been busy working a bag to hold your dear husband’s tobacco, and Theodore is making the rigging of a beautiful war-vessel for your little Carl, and good old Bernhard is helping him.

‘**You were quite in the right in saying that I should not regret making this voyage with my husband ; my health is very much improved already ; still it is very inconvenient to live in such a confined space, and the smell of the cargo is very unpleasant. This evening**

TRADITIONS OF THE GREENLAND ESQUIMAUX.

THE FIRST MEETING OF THE GREENLANDERS WITH THE SCANDINAVIANS IN THE NEIGHBOURHOOD OF GOTHAAH.

Some Esquimaux were once travelling in a skin-boat from the southward to Godthaab, but as the country was at that time but thinly populated, they did not meet with any people at Godthaab, nor at the place where the Moravian settlement of Nyhernut is now located. Sailing onwards, they discovered at Kanguasak, eastward of Kornek, a very large house ; they landed, and went into it, but did not know who the inhabitants were, because they were not Esquimaux ; in fact, they had suddenly, and for the first time, fallen in with the Scandinavians. The arrival of this boat afforded the latter great pleasure, as they now for the first time saw the Greenlanders ; but these were frightened at the Scandinavians, notwithstanding that they shewed themselves friendly disposed ; therefore they hastily launched their boat, and went away, although they were eagerly treated to remain. When the boat reached Kangersinnek, they discovered many more Scandinavians living at Ilulialik, Ujaragassak, Ivisartut, and Nunatarsuak ; but they rowed hastily past these places.

When they returned from this journey, they informed their countrymen of what they had seen ; and when these heard of the strangers near Godthaab, they visited them, under the guidance of the first party. Many boats went together ; and when they reached Kangersinnek, they entered freely into communication with the strangers, for they noticed that they were friendly and peaceable.

Gradually the Greenlanders came and settled in their neighbourhood in great numbers ; and as the Scandinavians soon learned a little of their language, friendship and good-fellowship soon sprang up between them.

Now saw the Greenlanders that there were also Scandinavians at Kapisilik and Amaralik. It is related that at the first place a Greenlander and a Scandinavian became very good friends, and liked each other much. It was their custom to challenge each other to trials of skill ; and when they tried who could shoot the furthest with the bow, their countrymen always stood around to witness their skill, since they always shot their arrows unusually far ; but they were such equal bowmen that their arrows generally fell side by side, so that neither could outdo the other.

One day, when they had been shooting this way, and the others stood looking on, the Scandinavian said to his Esquimaux friend : ‘One of us must be the master. Let us climb that mountain yonder ; but first stretch out a large reindeer-skin upon the little island below it, and then let us see who can, from the summit, hit the skin with his arrow. He who misses, shall be thrown off the precipice ; and he who hits the mark is the best man.’ Thus spoke the Scandinavian ; but the Greenlander answered : ‘I do not like the proposal ; for we are comrades, and it is not good that either of us should perish.’ But the first repeated the proposal ; and although the latter sought to turn him from it, he obstinately insisted upon its being done, and his countrymen said it would serve him right if he should be thrown off the precipice. Notwithstanding the Greenlander’s reluctance, they at last consented to go, and a great crowd followed, to see the trial of skill.

When they had come up on the mountain, the Scandinavian shot first, and missed the mark ; then shot the Greenlander, and he struck the target, so that his arrow flew right through the skin. The Scandinavian, who had himself made these terms, now went to the edge of the precipice, and addressed the crowd ; and the Greenlander pushed him off the precipice, just as he had proposed. The Scandinavians cared nought about it, since he had brought the fate upon himself, and continued to be good friends with the Greenlanders. From that time, this mountain was called Pisigarfik, because here two shot together with bows.

About the same time, the Icelanders at Ujaragsuit hired as servant an Esquimaux girl, named Navaranak, and at first seemed very well satisfied with her ; and at this time the Greenlanders and Scandinavians began pretty well to understand each other’s language.

One day, Navaranak said to her masters : ‘The Greenlanders are beginning to get angry with you ; and when she visited her own people she said : ‘I have heard that the Scandinavians are coming to make away with you all.’ *This lie she snatched out of the air*, for both parties were living in the best understanding. Nevertheless, the Scandinavians began at last to get angry, as they gradually put faith in the words of Navaranak ; wherefore, they at last armed themselves, and went out to destroy their threatening enemies, who were living in tents at the entrance of Ujaragsuit. When they reached the tents, they found that all the men had gone reindeer-hunting, and they only met with the women whom they immediately commenced putting to death.

When this slaughter began, two women slunk away, one of them holding a sucking child. These two women ran from the tents, but the Scandinavians soon saw them, and pursued them. The woman who was carrying the child was now deserted by her fellow-fugitive, who crept into a crevice in the rocks. When the pursuers came near to the one with the child, she sprang up on a large stone, whither she was immediately followed. One aimed a blow at her with an axe, which she escaped by springing off the stone. At last she was tired out, and they killed both mother and child. When the murderers had retired, the woman who had escaped returned to the tents, where she found all the others lying dead.

When the hunters came home, they found all their wives murdered ; but one remained alive, whilst all the numerous tents had lost their female population. The husband of the woman who was murdered with her child was the most enraged. This man went round visiting his countrymen, in order to find a clever conjuror ; and when he had found one who well understood his art, he entered into a compact with him. He took him with him to his own house, and began to construct a boat that should not be like an ordinary umiak, and which should enable him to take revenge on the Scandinavians. When he had finished the framework, he covered it over with finely bleached

white seal-skins, mixed with a few others of a dirty white. When this was quite finished, the conjuror charmed it. He then had it launched, and several Greenlanders got in to try it on the sea. When it was a short distance from land, it resembled a piece of ice, without shewing that it was full of people, who could see all that passed through holes that were left in the sides. The builder of the boat called out to them to make it heel over, and when it did so, it precisely resembled the rolling of a large piece of ice. He was satisfied with it, and the Greenlanders considered it an excellent means of falling unawares upon the Scandinavians.

They made their first attempt upon the inhabitants of Ujarasut; but when they came there, they found all the houses empty, for the Scandinavians had been apprised of their intention, and had, together with the inhabitants of their neighbourhood, removed to Amaralik, collecting themselves in one place for mutual protection. The husband of the slaughtered mother went with his comrades to Amaralik. When they were yet a good distance from the Scandinavians, they waited for the sea-wind which blows into the fiords, and drifts up the lumps of floating ice. With this wind, they made use of the new boat to get close in. They were led by the conjuror. They soon saw to the east the Icelanders' large house, which was painted black. (It was because of this painted house that the Greenlanders called the fiord Amaralik.) In the meantime, the boat drifted on with a gentle westerly wind, and they got sight of the Icelanders, who now and then went in and out of the house. When one went in, another came out in his place, and so they kept watch. One came out, and looked sharply in the direction of the boat, shading his eyes from the sun with his hand. He called out: 'Here come the Greenlanders.' Instantly rushed a great many out, and one called out so loudly that it could be heard out on the fiord: 'That is not a boat; it is a lump of ice.' And instantly the Greenlanders allowed it to heel over, in imitation of ice calving; and after a short time the whole of the Scandinavians went into their house. When the boat had drifted ashore, the Greenlanders said to the conjuror (Augekok): 'Now must you conjure your best.' He sang an incantation, which hindered those who had gone into the house from coming out again.

The Greenlanders approached the house, and began to fill the entrance with brushwood, and one from Niviarsiot, who had brought fire with him, set light to it. Whilst he was doing this, another peeped into the house, and saw the Scandinavians spinning the woman's head upon a stick, using it as a kind of wheel of fortune in a game of hazard. When the husband saw his murdered wife's head, he became furious.

Now first when the brushwood in the passage was in a great flame became the Scandinavians aware that there was something wrong. Some sought to force their way out, but the Greenlanders shot down with their arrows all who forced their way through the burning brushwood. At last the whole of the outside of the house caught fire, but as yet the chief, Oungartok, had not been seen; but whilst they waited for him to rush out, one of the Greenlanders called out: 'See, there is a Scandinavian coming from the west.' The others saw that it was the gigantic Olav, one of the chiefs, who came dragging after him a large fiord seal. He was running; and when he came near enough to see the house burning, he became furious, and ran at such a speed that the heavy animal he was dragging went hopping and bounding from the ground. Nevertheless, before he could reach the house, he was killed by the Greenlanders, after having received so many arrows that his body was nearly stiff with them. He was the only one who dared to go hunting every day, whilst the others kept themselves at home in anxious fear.

When the flames had destroyed a great many Scandinavians, Oungartok sprang with a great leap through the large window, having his little son in his arms. He took to flight, but was followed by the murdered mother's husband, who gradually gained upon him. Oungartok ran as fast as he could, but every time he looked back he saw his pursuer getting nearer. He therefore kissed his son, and threw him into a lake, by the side of which he was running. Freed from this burden, and his speed urged on by rage, he soon outran the pursuer, who quite lost sight of him.

Oungartok escaped from Amaralik, and went to the south, and joined his countrymen, settled a little to the eastward of *Kakortok*.

The Greenlanders now thought that they had killed all the Scandinavians who were under Oungartok; but whilst they were still seeking for him, they heard a sound like the voice of one hauling upon a rope, and caught sight of a Scandinavian who had gone on board a boat, had hoisted sail, and was ready to start off. When he saw the Greenlanders coming, he called out to them mockingly: 'When the summit of Great Amaralik is clear of mist in the morning, there will come an easterly wind;' adding mournfully: 'Ah! you scum of the earth.' Now sprang there suddenly up an east wind. The Greenlanders hastily pursued him, but as the boat sailed fast, he easily escaped them.

When the Greenlanders returned to their homes, they were grieved at all that had happened. They accused Navaranak of having caused all the mischief by her malicious falsehoods; they therefore determined to put her to death. Cords were fastened to her hands and to her hair, and she was then dragged over the ground and loose stones until her entrails came out, and she died.

Oungartok was afterwards killed by a Greenlander in South Greenland.

Note by the Greenlander.—'Although I have written this tradition, I do not know from whence the information was first obtained, for our forefathers were without knowledge; and could not commit their history to writing; and on these grounds I think it possible that their descendants, when describing the downfall of the Scandinavians, may have altered some facts, and exaggerated others, but the principal part is generally believed to be true.—Written by ARON at Kangek, near Godthaab.'

MELIBEUS DISCOVERS THE APTERYX.

It is a pity that one of so amiable and loving a disposition as that of Melibeus should not have been dowered by nature—through the intervention of course of Mrs M.—with children; and I write this with some unselfishness, inasmuch as he is sponsor to my own Emilius John, and has, I am aware, in his last testamentary instructions, behaved towards him, as the phrase is, 'something like' a godfather. Melibeus not only loves children, admiring them as he walks abroad, and tickling the fat cheeks of unknown babies, to the considerable alarm of those who carry them, but he is in some respects, in character, a child himself. No man is wicked, no man is a fool, who is fond of the society of children, and sympathises in their pursuits. I envy my friend above all things the facility with which he makes allies of the shiest and most antagonistic infants; for I, for my part, do not possess that happy gift, and really feel less at my ease, when in company with my own Emilius John, than Melly himself does, as that disrespectful youth denominates his godfather.

When, therefore, my friend proposed to take the child to the Zoological Gardens—as a visitor of course, although some of his maternal relatives, and my wife especially, aver that he is a most extraordinary

production, and quite worthy of presentation to any Society—in my company, and without a nurse, I was considerably staggered. I have only one formula for Emilius John whenever he goes wrong—which occurs incessantly, and without the least change to going right, or even that slight repose which might be derived from his doing nothing at all—and that formula is this: 'If you do that, again, Emilius John, I'll whip you—mind you—as sure as ever you're born.' And then he does it again, and I *don't* whip him. But upon Melibeus most solemnly promising to take the whole responsibility of the youth, and even the youth himself, if it should be necessary, upon his own shoulders, I consented to make one of the three; and the more readily because I knew my friend was himself consumed with a desire to make acquaintance with the *Apteryx*.

The contents of the young gentleman's Noah's Ark—a vessel about the size of a Thames wherry, and the gift of Melibeus himself—were minutely catalogued upon the evening previous to the expedition, and I disgraced myself in my son's eyes by confusing the leopard with the jaguar. It would be very much better, I think, since this sort of toy is brought to such a pitch of perfection, that the name and habitat of every animal should be printed prominently and distinctly upon some portion of its person.

Upon the next morning, instead of seeking the city in a 'bus, as is my invariable custom, I found myself in a Hansom (and how that boy, as 'bodkin,' did kick!), with Melibeus and Emilius John, in Regent's Park. The mansion of the late Marquis of Hertford attracted the boy's simple fancy: 'Let us live *there*, pa,' exclaimed he; and observing, I suppose, the same expression pass over his father's countenance as he sees there when his mamma demands some novelty beyond the reach of my limited purse, he added: 'Melly is rich, Melly will buy it—won't you, Melly?'

'Well,' replied Melibeus gravely, 'I am afraid, my boy, it is rather too much of a country-house for me. I should like to live more in the town.'

'Rabbits,' murmured Emilius John; by which he meant to suggest that tame rabbits might be kept at such an establishment—a convenience and source of pleasure the very greatest which his mind is at present capable of conceiving.

'Here are the rabbits,' exclaimed Melibeus, with that dexterous evasion which distinguishes him in all his arguments with the young—whereas Emilius John would have worried *me* for an hour about buying that house, I know—'here is the place for the rabbits; and for the guinea-pigs, as well as for the more ferocious of the animal creation. In this little lodge by the turnstile lives "the Man"—you have heard of him, my dear child, have you not, and of the wonderful power of his eye over all other creatures?'

I have been often assured (by his mother) that Emilius John, like the great Nelson in his youth, does not even know what Fear is, but I am bound to confess that it was with something very like that sentiment that he approached the gatekeeper. He was certainly relieved when the complicated machinery had delivered him, with a click, from the immediate supervision of that official, and he felt himself fairly in the garden, for he looked up in our faces and observed, in a confidential tone: 'I didn't like that Mr Noah one bit.' The biblical knowledge of the child is really remarkable, and is constantly being applied to the affairs of everyday life, and *vice versa*. After having been presented with a tin tandem by his god-father, in which he took much pleasure, he was informed, in the course of study, that Moses was the leader of the Israelites through the wilderness, whereupon he instantly inquired: 'And who was the wheeler?' Moreover, Emilius John can read in a small way, and provided that the type be of goodly dimensions; and

this accomplishment, as sometimes happens, was the cause of serious disappointment to him. Immediately after the bears had received their buns—from the end of Melibeus's umbrella—we came upon a huge hand-writing upon a wall *60° TO THE GREAT CARNIVORA*.

'Is that a bird?' demanded Emilius John, with excessive interest. Nor could the united intelligences of Melibeus and myself explain to that child what the carnivora was, or persuade him that he had beheld it when he had seen the lions and tigers.

'In what other place save this,' exclaimed Melibeus, 'is such a collection of curious creatures to be seen in so fair a spot? What opportunities has the student of natural history here offered to him of investigating the latest wonder from the most distant climes! Instead of seeking the antipodes, he has merely to call a cab. In place of having swamps and savages, and want of food and drink, to contend with in his explorations, he surveys the object of his curiosity in the house best adapted to its wants, but placed in a luxuriant garden, and within a few minutes' walk of soups and ices. Nay, the emporiums where these are purchased supply also the favourite food of the animals themselves, who need no longer be at the inconvenience of plucking it from the tops of the highest trees, or extracting it from the bowels of earth, as the case may be.'

'Emilius John,' observed I, begging pardon of my friend for the interruption, 'it is a mistaken benevolence which prompts you to offer the Bison nuts. He is also not to be attracted by the words "Tig, Tig, or Ticky, Ticky," endearing expressions which you had better reserve for another genus. The wild Boar will doubtless appreciate them.'

'I wonder,' continued Melibeus, 'whether these various creatures are satisfied with the arrangements made by the Society for their comfort? Do they appreciate the regularity and punctuality with which their meals are supplied to them; or would they prefer—like the Irish, and other falsely independent tribes—to live wretchedly from hand to mouth as their own masters? It has always appeared to me that the lion regards his keeper with something more than a sentimental affection, just as the poet remarks of the plaintive wood-pigeon warbling high, "How nice he would eat with a steak in a pie;" not only, that is, with admiration and gratitude, but also with another sense which is not reciprocal in the keeper. It never crosses the latter's mind to think how the lion would be—nicely *jointed*.'

'I want to see the lions have their din-din,' exclaimed Emilius John; nor was he by any means singular in that desire. About the hour appointed for the ceremony, a stream of people began to set in towards the Great Carnivora; from the haunts of the Arctic Bear, from the tropical regions of the Bird of Paradise and the Paroquet, from the watery dwelling-places of the Beaver and the Seal, they poured in groups—old men and maidens, young men and children—all hurrying towards one spot, as the inhabitants of the Disunited States alone are accustomed to hurry to *their own* victories.'

'This way, Eliza Jane—that only leads to the cas-iowerry as peeked at Joe.' 'Come along, missus, or else we shall lose half the fun on it; hark at 'em a roaring.' 'Mamselle—how I do hate French people!—Mamselle, I say, *depechez vous*, will yer?' Such were the sounds which poured forth from all quarters as we took our stand, with Emilius John upon his god-papa's shoulders, and beheld dinner served to the King of Beasts. It was rather a savage exhibition, to my thinking, but the ladies seemed to enjoy it greatly. 'If,' I heard one of them observe, 'the meat were but a little cooked, or smothered in onions or something, it would be quite delightful, but really it is so excessively underdone.'

The benevolent glance of Melibeus detected that the male leopard had appropriated that portion of food

allotted to his consort to himself, as well as his own, and indeed was sitting upon them both in his wooden crib, demanding more, like a spotted dog in a manger. We drew the attention of the keeper to the conduct of this grasping and discourteous animal, but the lady received no redress.

'He allus does it, and he allus will do it,' was his reply; a case of consistency in marital cruelty which should certainly be brought under the notice of Sir Creswell Creswell, or of the individual who fills the corresponding position among the Great Carnivora.

There were some other crying wrongs discovered by Melibeus during our visit, but they were committed by the Zoological Society itself; not by beasts, but by man, vain man, who, tricked in a little brief authority, behaves in a manner to draw tears from the rhinoceros.

'Why,' argued my friend indignantly, 'do they write up, *The Otter Bites* against the gate of that comparatively harmless creature? Over the lintel of the Bengal tiger there is no such warning. Why do they take away the moral character of the elephants—whose vacillating trunks are in wait for nothing beyond cakes and oranges—by writing over them *Beware of Pickpockets!* These are the sort of imputations which suggest and foster crime. Why is the Lobster, whose eyes are half out of his head with astonishment at his exposed condition, and because he cannot get through the glass into the open sea he perceives reflected yonder—why, I say, is he further insulted by having written under his home "The Common Lobster?" Now, the common lobster, as everybody knows, is of an obtrusive scarlet, and as often as not possessed of but a single claw. Above all, why, O why is the peaceful woodpecker immured in the same department with the alligator? Does the Society suppose that that British bird will ever be induced to perch in such a creature's mouth, and warn him of approaching danger, as we are told is the case with that parasitical bird, the —— Gracious goodness, where is Emilius John?'

The alligator lifted lazily his enormous jaws, as though to assure us, from ocular inspection, that he at least had had nothing to do with the youth's disappearance; and the tortoises winked with an air of lazy cunning, as if they could tell us something about it, only it was not worth their while.

'Give me my child,' cried I—'Melibeus, give me back my child!'

'He has doubtless gone in search of the hippopotamus,' returned my friend soothingly; 'he has been entreating all the time to be led straight to the river-geegee, as he called him, since he could not pronounce the more scientific name.'

Called and could not! Alas, he had already begun to speak of my beloved infant in the past tense!

'Gone to the hippopotamus!' shrieked I, and a certain vision of that creature with its colossal grinders shook my parental soul.

'A ruminating and graminivorous animal,' remarked Melibeus, reading my horrid thought. 'An eater of grass and bran, but a protector of children. We shall doubtless find the lad in ——'

A heart-rending scream in our immediate neighbourhood at once attracted us to the outside of the monkey-house, and there, to our great joy, we found the missing Emilius John, although by no means in prosperous circumstances. An enormous monkey had got hold of the end of the child's scarf, and was slowly dragging him, by means of it, close up to the cage-wires; while an accomplice, with both his paws outstretched, was prepared to receive him as soon as he should come within reach—exactly as one's keeper waits with the landing-net when one has hooked some prodigious salmon. Directly we had effected the infant's release—to which, however, the most stubborn resistance was offered—his would-be captors resumed their ordinary occupation of walking against time up

and down the floor of their establishment; their habitual cheerfulness being even increased by the possession of about a couple of feet apiece of variegated silk—the property of Emilius John—which they endeavoured to wind about their necks after the latest fashion. This misfortune had arisen from the generous impulses of my offspring, who had fled from us to feed these apes with nuts, and perceiving him to have a bagful in his hand, they had doubtless planned the capture of the entire cargo. Disgusted with this ingratitude, he now sought for worthier recipients of his bounty among the parrots, for the most part a gentle and loving species, which, as Melibeus justly observed, appeared to be descended from ringdoves and raspberry cream. The cockatoos, on the contrary, were a proud and imperious race, with noses very much too big for them, and in particular, there was a black one of most Satanic appearance, whom Emilius John immediately designated 'Bogey.' This remark of the infant's, coupled with his inquiry, when we came to the anteater, of 'Did he eat Aunt Susy?'—a relative of my wife's, recently deceased, transported his godfather with delight. I scarcely know which of the two enjoyed themselves most thoroughly; which appreciated most keenly those Flying Foxes, that the younger spectator compared to old boots, and the elder to those smelling water-proofs, which, worn by the cad of an omnibus, I have known to turn half his 'insides' out in the worst of weather; or that gnarled and knotted Salamander, who looks so much more like firewood than an animal to whom flame is said to cause but little inconvenience.

Finally, we arrived at the main object of our expedition—the apteryx—that is to say, we arrived at her dwelling-house, in which, as is perfectly notorious, she is never by any chance to be seen. The arena in front of it was quite deserted; the public having taken themselves off elsewhere, preferring some less rare specimen of feathered fowl who could be beheld, to even a wingless bird who was also invisible.

'In Bullock Smithy,' observed Melibeus, 'the people would stand here for hours, staring at space, and lose all the rest of the garden in hopes of the impossible; how far wiser and more philosophic are the Londoners.'

'We at least,' returned I, 'seem to be quite as foo—'

'Hush!' replied Melibeus, 'and you shall see what you shall see, as the children say.'

It was the most extraordinary bird I ever beheld. It would have been more like a guinea-hen than anything else in the world, had it not been so much more like a hare. We picked up three of its feathers, for it had feathers, although it did not look as if it ought to have had them. One of its eggs, almost as large as that of an ostrich, stood upon a table having a glass shade upon it, with a purple velvet border; but the apteryx of course had only laid the egg. She was very much frightened, and glad to run back again into the dark corner where she lived, and cover herself up with straw. Ever since she came from New Zealand, she has, it seems, avoided the public eye in this manner. Only a very few people in all London have really seen her, although a great many will, of course, be found to affirm the contrary. By what device, then, it will be asked, did we ourselves obtain a view of this animal? Alas! I am not at liberty to disclose that matter.

'What shall I say, Melibeus, when people inquire how we obtained this interview? I think we may rely upon the secrecy of Emilius John.'

'If he whispers one syllable of the matter,' returned he with gravity, 'I will give him to the Great Carnivora.'

'I don't believe there is none,' observed the young gentleman obstinately.

'Then I will purchase the black parrot, and cause it to be set loose in his nursery after nightfall.'

At this frightful threat, Emilius John protested, with many tears, that he would never reveal the means by which this rare treat had been afforded to him.

'And as for us, my friend,' said Meliboeus, 'let us say that we lured her forth by *imitating the cry of the male*; that we brought to light the Invisible, the Wingless Bird, by uttering the plaintive (I dare say it is plaintive when it isn't defendant) the plaintive cry of him she has left so long disconsolate in the distant antipodes.'

D I E T.

WITHOUT giving our adhesion to some rather startling theories on the subject, it is impossible to deny that the character of a nation, physical and moral, depends greatly upon the national diet. Among the lower animals, we trace with sufficient distinctness the direct connection between their food and their qualities, and, in a modified degree the same maxims may be applied to ourselves. The more diversified the nourishment, the larger is the field in which the energies of the race develop themselves; while, on the contrary, where there is restriction to one or two articles of food, the energies are always seen to be contracted into a narrow compass. Far be it from me to assert, even by inference, that the best fed nations are superior in merit to those on scantier commons, and that virtue or learning is the invariable concomitant of a good dinner. I wish merely to imply, that a country whose inhabitants are well fed, is usually possessed of more than material enjoyments, that the arts and sciences flourish best where the markets are well supplied, and that intellect acquires a wider range and stronger stimulus from the very exuberance of popular prosperity. Doctors tell us that our diet should vary as much as possible, that man is omnivorous, and that all the earth should minister to his nutrition. Farmers and graziers prove to us that cattle are all the better for a change of food, and the registrar-general confirms the doctrine in its widest application to the human race. An inquiry into the diet of our ancestors and our neighbours may not, therefore, be devoid of interest.

Bread is the staff of life; but the word 'bread' is liable to be interpreted too narrowly. With us, bread implies a paste of flour and water, and generally a fermented or leavened paste, shaped into certain familiar forms which we name loaves, rolls, and so forth. The sailor, the purser, and the ship-chandler would extend the definition to 'ship's bread,' which we call biscuit. The Arab or Hindu, again, would stretch the word a little further, so as to make it include his rude staple of thin cakes, hastily kneaded on a flat stone, and as hurriedly baked on an iron plate or girdle; but the article 'bread' is elastic enough to embrace these and a great deal more. All grain, however prepared, whether rice, wheat, Indian corn, or millet—all seeds, as those of the *hocolus sorghum*, or of the bread-fruit tree—all root-flour, as that of the manioc, the cassava, or the yam—in a word, all farinaceous food, must constitute 'bread,' in the broad and true sense of the word. And bread is really the first test of a dawning civilization, the universal and most ancient food of man, when man is found in a position above that of the savage. The wild wood-rangers, the 'noble savages' of the poet, they who eat the berry, or snare the beast, or rob the wild-bee of his golden honey, have no bread. Before their women

have learned to grind some dry root to a coarse powder by the aid of two broad stones, a great stride in civilisation must have been made. The next step is, perhaps, to plant some kind of native grain within a rude enclosure; the hoe and the sickle conduct the inventor gradually to the barn and the handmill; stores of food are garnered up, forethought and the new sense of property replace the reckless improvidence of the barbarous hunter, and the year is not spent in alternations of feasting and famine. Bread, therefore, is really the staple food of the family of Adam. Much as it may vary in character and in preparation, the nutritious principles—the starch and the gluten—are always present. The Swede and the Malay are nourished by the self-same substances, however the black loaf of the one may differ from the mess of rice that makes the repast of the other. The various grains have each their empire and prescribed locality, but two out of the number assume a special importance—namely, rice, the monarch of the torrid zone; and wheat, the staple of temperate latitudes. The latter is the 'corn' of Scripture, the grain mentioned in early history, the food of Jew and Gentile, of Greek and Trojan. It was to buy wheat that Joseph's brethren crossed the desert to Egypt. It was wheat which, previous to a time of dearth, Joseph monopolised in his royal master's interest. Wild corn is, in truth, a theme for hypothesis: experimental philosophers have of late shewn us that the seeds of wild grasses will, when cultivated, produce a very close approach to an inferior grain, but history does not record the pre-farinaceous epoch when corn flourished in a wild state. Still, so far as we know, the fat plains of Mesopotamia and the Nile valley must have been the cradle of wheat. The mummy wheat found in Egyptian catacombs, stored away, thousands of years back, along with embalmed Pharaohs and hierophants, had preserved its vitality well, and sprouted and multiplied when sown. At the same time, it is curious to note the different estimation in which Egyptian wheat has been held in ancient and modern times. Rome and Byzantium were fed by Egypt and Barbary, as we know, and the classic writers gave liberal praise to the fertile soil and the yellow grain of the Nile. Now a days, Mark Lane sets a very trifling value on the Egyptian wheat, and the corn-factors of France, in especial, give a lower market-price for 'corn out of Egypt' than for any other, attributing its inferior quality to the irrational method of its tillage.

Space is wanting to discriminate between red wheats and white wheats; between the power of keeping inherent to British flour, the delicate quality of South Russian, and the great amount of nourishment, far surpassing that of the Old World, which American wheat-flour affords. Nor in a few lines could justice be done to the flint-wheat, so called, of Sicily and Naples; that hard small grain from which the finest macaroni is made, and which contains in its husk an unusual percentage of silex. It is a patent and notable fact, that the wheat-growing countries of the world are those which rank the highest in arts and arms, as well as in rational freedom and the amenities of life. I am aware of but few instances in which wheat-flour is perverted from the office of *bond-fide* bread-making, and of these the most conspicuous were the Anglo-Saxon furnity and the Moorish couscous. The latter mess of boiled grain, the easy preparation of which suits the indolence of Juba's countrymen, is the chief dish of all the tribes of North Africa. Rice, on the other hand, though it feeds many more mouths than wheat does—for nearly two-thirds of the human race subsist upon it—is incapable of imparting the

same vigour to the muscles or the same solidity to the flesh. It has some signal disadvantages as compared with wheat. It is impossible for even the Chinese or the Hindu to live on rice alone; a food so insipid requires pungent seasoning, such as curry, the native peppers, and other hot stimulants. Again, the quantity of grain required to furnish nutriment could not, according to the best medical evidence, be swallowed without injury to the system, and therefore the disciple of Pythagoras is forced to seek for extra nourishment. He finds this in corn, in pulse of various kinds, and in small portions of dried fish and goats' flesh, at the use of which the Brahmins connive. But wherever rice is the chief food, we are certain to find a population fond of ease, languid and lymphatic, and comparatively indifferent to progress. Rice also forms, with the exception of flax, the particular kind of crop least favourable to health: it requires a warm sun and a wet field, and the countless artificial trenches and flooded lands exhale a pestiferous miasma.

Western Africa relies on the Guinea corn, eked out by numerous fruits and by the cocoa-nut; while the eastern portion of that continent depends on millet, on dhurra, and other grain approximating to pulse; on the sesame, dear to readers of the *Arabian Nights*; and on a bearded wheat. Further south, the populations of which Dr Livingstone is the discoverer, appear to subsist in a large measure on tubers, gourds, and pumpkins, a diet predisposing to many diseases, and by no means favourable to bodily vigour—a fact also remarked by Sir John Malcolm in Persia, the natives of which country are passionately addicted to the use of the cucumber, the melon, and other watery vegetables. The bread-fruit, associated in most minds with the strange story of the mutiny of the *Bounty*, and the stranger colonisation of Pitcairn's Island, is one of the most remarkable provisions for the supply of a tropical race of which we are aware. There was something in the idea of a tree bearing quartern loaves in the shape of fruit, and of the staff of life sprouting spontaneously within the grasp of mankind, which forcibly impressed the imaginations of our fathers. But, after all, the bread-fruit, if we except the remarkable shape of its fruit, is not more valuable than the plantain, the produce of which deserves the generic name of bread too, as also does the edible fern on which the New Zealanders feed. Bread-fruit—the natural loaves—must be eaten fresh, and cannot be stored for any length of time; and although a sour paste can be made of it when pulverised, which will bear keeping, it is neither palatable, to European fancy at least, nor wholesome. But bread is all but universal: it is made from the chestnuts of the Mediterranean countries, from the cassavas and yams of South America, from the rye and barley of Norway, which, mixed with pine saw-dust, compose those huge black loaves which can only be cut with a saw, which are kept for years, and whose solidity is the terror of travellers. Next to rice and wheat, and in value far surpassing oats, barley, rye, and all the secondary grains, comes maize or Indian corn, with its beaded and golden ears, those yellow 'corn cobs' which in America are the reliance of vast provinces. The Maize is one of the chief boons we owe to the New World that Columbus explored; it feeds the population of great part of Southern and Eastern Europe, and is gradually spreading over Asia. But, prolific and nutritious as it is, maize has its faults; unless the flour be carefully dried, it is apt to retain a mawkish flavour of sour sweetness, very nauseous to some palates; and, like rye and some other grains, it has an ill influence on the skin of those who eat it, unless animal food be partaken of at the same time. This was one of the complaints of the Celtic peasantry during the Irish famine, who, in spite of actual starvation, could never be brought to fancy the 'yellow meal' which public and private charity afforded them.

There is one peculiar condition belonging to all bread made from seed-flour, though apparently not that from root-flour, that it will not, alone, support a healthy existence. Some form of animal grease, fat, or butter, is absolutely necessary to its assimilation, and we find the whole world of one accord on that point. In ancient times, when this was less understood, and before the potato was naturalised in all countries of Europe, dreadful disorders—such as the *Plica Polonica*—were endemic among the labouring classes of Germany, Poland, the north of Italy, and elsewhere, and even in England the same class of complaints existed in a milder form. The use of animal food is very unequal throughout the world, depending, as it does, partly on the demands of temperature and habit, and partly on the supply. The millions of Hindustan depend on that sacred creature, the cow, for their share of such nutriment. That native must be poor indeed who cannot afford a few spoonfuls of ghee, or clarified butter, to add to the needful salt and pepper which season his mess of rice and peas. In China, where there is no milk, fish and vegetable oils are a palliative; while the fat of the pig, or, where it can be obtained, of the porpoise, sturgeon, or shark, lubricates John Chinaman's bread. The Tartar and Tibetan wallow in milk and other dairy produce, luxuriate in buttered tea, and eat the flesh of deer, sheep, and horse indiscriminately. Western Asia and Europe find the cow their chief prop and stay in this respect; so long as butter and milk are obtainable, bread can afford nourishment to millions. The Lappander has little food but what his reindeer affords him; and the Esquimaux, who has no bread, relies on his harpoon, and on the whale and seal oil, whose heat-giving properties enable him to bear the polar climate. On the whole, Australia and America, the New World and the Newer World, eat much more flesh than we natives of the ancient triple continent. Doubtless in all Australia, a country which we found almost destitute of mammals, there is no person so poor as not to eat meat every day. Would that we could say as much, at home! In America, too, the consumption of animal food is immense. Even the plantation negroes receive more fat pork with their Indian corn than falls to the lot of the peasantry of the most prosperous country in Europe.

America has always been a land of flesh-pots and solid meals. The aborigines of that vast continent were probably the only savages who were ever found living wholly on the produce of the chase, with the exception of the inhabitants of the Arctic Circle, to whom the rigorous cold denied fruit-tree or corn-field. To this day the thinned tribes of the far west trust for food to the migrating herds of the bison, to the deer of the woods, and the bighorn of the Rocky Mountains. The small quantity of roots and parched corn which is produced by the despised toil of the squaws, shews how trifling is the esteem in which the cereals are held by the ancient lords of America; and *charqui*, or buffalo-beef dried in the sun, is the staple dependence of as well-grown and athletic a race as the world can exhibit. It is, perhaps, scarcely surprising that the nations which have subsisted principally on animal food have been almost always active and warlike. The Scythian hordes of Attila, Genghis, and Timour, the American Indians, and the fierce cannibal tribes of the Pacific, as well as the Caffres of the Cape, are notable examples of this. Pastoral nations, or nations of hunters, are easily disposed to war, when game grows scarce or grass scanty. On the other hand, the most prolific races of mankind are certainly the sedentary inhabitants of agricultural countries, and especially of such agricultural countries as can afford but poor nourishment to their denizens. India, China, the Peru that existed anterior to the conquest, and the island of Hispaniola, are remarkable illustrations of this truth, of which ancient Judea furnishes another example. But Ireland

is perhaps more remarkable still. The extraordinary rapidity with which the population of the island increased between the time when the potato, which Sir Walter Raleigh first planted in his garden at Youghal, had become the national food, and the famine of 1847, would seem to shew a direct connection between poverty and numbers. The potato, railed at by satirists, banned by sages, and gibbeted by historians as the fertile cause of pauperism and indolence, has been, on the whole, a great blessing to Europe. Its antiscorbutic properties have done more good to the health of the most needy classes than can be appreciated by any one who has not read in the records of the past how black was the cloud of annoyance and misery that hung over the toiling millions of Europe two centuries ago.

In the middle ages themselves, a healthy skin was esteemed a sort of privilege of superior station. Soap was rare, linen costly, calico unknown; and the black bread, the indifferent fruit, pickled herrings, and salt provisions, which were the usual food of the poor, produced many disorders, which medical skill and improved cleanliness have extirpated. Famine, too, and famine compared with which our modern scarcities are trivial, was a constant sojourner in the land, and Plague was ever ready to tread on the heels of that grisly intruder. There is a sentimental belief among some of us, due to the fancy of a few romance-writers, that in 'the good old days' the population of England lived comfortably on roast-beef, white bread, and unstinted ale. 'They have given up meat already,' &c., says the ingeniously deceptive author of *Coxingsby and Sibyl*. No more glaring blunder was ever made. We are apt to be dazzled by the recorded glories of the middle-age feasts—of the four wethers set aside to supply gravy for a single peacock—of the hecatombs of swans, game, poultry, pigeons, and wild geese—of the slaughtered boars, the barons of beef, the venison pasties whose walls were solid as those of a tower, the flowing oceans of ale and wine, the gluttony and drunkenness that graced a coronation or a triumph. But these were the field-days and grand galas of the epoch. There was much of fasting, much of unwholesome feeding, that went to compensate for one of those roaring orgies. We know by the year-books of the Duke of Northumberland that for half the year the gentlemen and pages of the ducal household, second in point of splendour to no subject's in Europe, were strictly reduced to a diet of salted beef, only tasting fresh meat during the summer season. Indeed, at a time when there were no roots wherein to maintain the cattle, no artificial grasses, and a limited stock of hay, it was necessary to kill and salt down whole herds for winter consumption, lest they should die of actual starvation when the grass failed them. The only fresh provisions attainable, even by gentlemen of ample means, during winter, consisted of river-fish, game, and wild-fowl. The tradesman, still more the country clergyman, deemed himself lucky when he could command a sufficiency of corned beef or pickled pork to add to the garden stuff and barley-bread which formed the principal part of his dinner. Salmon, in its season, was ludicrously cheap to our notions, but only on the banks of certain rivers. While the apprentices and servants of Newcastle, Shrewsbury, and Worcester were covenanting with their masters not to be fed on salmon 'more than four days of eche weke,' this royal fish was excluded from most markets for lack of transport. The Londoners were, as they still are, by far the best supplied of all Britons where fish was in question; but even in their case, Billingsgate was nearly silent in winter. Mackerel and herrings, from very early times, were sold cheaply enough during summer, but cod was less plentiful, and was mostly salted, for the better keeping of fast days. Carp, tench, pike, eels, lampreys, all sorts of slippery natives

of the pond, the stew-pit, or the river, were in brisk demand, and many forgotten recipes for cooking them were handed down from generation to generation. We know that Queen Elizabeth sent to Holland for a salad, and that in her reign England had hardly any vegetables save the cabbage, the carrot, leek, and onion, pease and beans, most of which were brought by the crusaders from Asia. 'Herbs,' accordingly, were much valued, and many a plant was eaten that we now trample under foot. The fruit produced at that time—damsons, plums, pears, apples, strawberries, outdoor grapes, nuts, currants, and stone-fruit—would provoke the scorn and compassion of a modern gardener. Spices were very dear, though in high esteem, sugar scarce and costly, tea and coffee, two centuries ago, unknown. The hop, proscribed by Henry VIII., was slow to make its way into the brew-house, from which it had been barred by law. Beer is almost the only article of consumption which was in a great degree cheaper than at the present day. Cheap it was, however, and sweet withal, the modern taste for the bitter blood of John Barleycorn being only known to the few eccentric persons who sipped *rum* stirred with rosemary. Beer, or ale, was, as Macaulay happily remarks, not only all that wine and spirits are now to ordinary Englishmen, but all that groceries are in our time. The maids of honour in Queen Elizabeth's reign were wont to breakfast at 8 A.M. on beef-steaks and nutty ale; and so late as the reign of William III., the populace went gladly to see the execution of Sir John Friend, inasmuch as he was reputed to have brewed beer of exceedingly bad quality for the use of the navy, an offence beyond that of treason itself. Not until 1790 did the English peasantry give up the rye-bread, which, with salt-herrings, eels, and bacon, had been their food since the Conquest; while Scotland adhered still later, and to a great extent still adheres, to the oatmeal porridge, the scone, and the bannock. We none of us, from the highest to the lowest, have much cause to regret the hard fare, varied by occasional feasts, of the days that are gone.

THE SPARK.

As when, amidst the embers cold,
Some little spark is seen,
Which, slowly fading, serves to shew
Where light and heat have been;

When all but hopeless seemed the task
To raise the sinking frame,
Some gentle breath has stirred the spark,
And fanned it into flame:

So, when within the human heart
The spark of sacred fire,
With lustre dimmed, though ling'ring yet,
Seems ready to expire;

When Hope is fled, when quenched by Sin,
No more does warmth enfold
The heart, where dusky winged Despair
Broods o'er the ashes cold;

God in his loving mercy sheds
His Spirit's quick'ning breath,
And upward spring the seeds of flame—
Life reigns where once was Death.

F. D.